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The Postcolonial City in India. From Planning to Information?

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Ravi Sundaram

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Infrastructure or what seemed to stand in for it, has served as the reference point for a series of debates in India in the last decade, including urban expansion and displacement of the poor, the "public-private" model, and middle class visions of global modernity (Aggarwal 2006, Fernandes 2006, Chatterjee 2008, Dupot 2011). Infrastructure has been the prime mover in debates on the Special Economic Zones (SEZ), often linked to land acquisition struggles in the urban periphery. For many years, crumbling urban public infrastructures epitomized bourgeois shame over Indian modernity's lack of purpose and the alleged corruption of political classes. Elite discourses and media coverage of the Chinese growth model are inflicted with a kind of infrastructure envy and a yearning for a quick transition to a high-rise, spectacular urban modernity. Despite all these contradictions and despite all the social upheavals that the infrastructural turn has set up in India, the move has pushed urban discourse in new directions.

1 Less well known and more recent, is the effort to introduce new technologies of managing urban populations. These initiatives range from biometric cards for slum dwellers which are linked to governmental welfare schemes, enumeration of urban land by linking it to digitized property titling schemes, CCTV platforms to survey streets and neighbourhoods, massive transportation databases that are linked to GPS enabled networks, and large GIS mapping initiatives sponsored by the Department of Science and Technology. Along with a biometric identity card scheme to be deployed at the national level, these technological interventions have the potential of exceeding many such comparable schemes worldwide in the sheer number of people affected [1]. In both the financial allocations and elite rhetoric, these schemes compare with discourses of planning in the 1950. Unlike unpopular land acquisition schemes that have seen widespread protest, new technological initiatives in the city have tapped into an information populism that cuts

across activists, judges, elite managers and liberal modernizers. Transparency, once associated in urban debates with modernist discussions of surface (glass, steel), has now emerged in public discourse as the ethical filter through which infrastructure is made visible. The 'informational turn' poses a cluster of new questions for the urban. These include relationships between social power and the urban poor, the modes of visibility and disruption in the city, and fractures within urban regimes when informational structures are rolled out by often competing state actors. While some of the issues of the new informational turn pertain to Indian cities, the larger implications go well beyond South Asia.

2 It was only by the 1990s that technological modernization became a slogan that cut across many parts of the social fabric. India's software boom and proliferation of media culture made the technological a necessary component of elite visions, popular common sense and curiosity. Technoculture was paralleled by national security pathologies, which has been a feature of Indian life in the past two decades. The recent initiation of massive information infrastructures as part of urban development has come in the wake of this.

3 It is possible to read the new information infrastructures as a functional supplement to a larger story of class differentiation and elite assertion after globalization, a sideshow in an essentially political constellation [2]. Such a view runs the risk of ignoring the considerable impact that contemporary information and media infrastructures are having on India's urban life. I want to suggest that we are possibly in the stages of a transition in the terms of urban discourse, where older sites of the formal-informal, legal-non legal, citizen-resident, will all be inflected, and possibly reconstituted through emerging technologies. These initiatives range from not just governmental information infrastructures, but financial and banking changes, security-related norms, and the linking of mobile networks with finance, identification and location advertising.

4 This essay reflects on the new urban turn through the prisms of land and population, both of which have demanded multiple technologies of enumeration, political claim-making and complex inscription practices at all levels of urban government. Multiple strands have fed into this emerging constellation. These include middle class mobilization in cities that have privileged information and transparency in urban discourse; anxieties about the opacity of urban informality in state elites making way for technologies of visibility. I also look at the transparency turn world-wide and the neoliberal biopolitics of urban governance, which seek to make visible both land and urban populations.

5 We are witnessing a major attempt to transform the existing technologies of managing urban populations since 1947. New information infrastructures attempt to rearrange the relationship between urban governance and traditional politics, seen as expressive of a corrupt and opaque urban system. As I argue in this essay, the mediatization of Indian cities and the expansion of low cost mobile telephony have added a new dimension to urban life in Indian cities, challenging traditional modes of urban governance. The historical borders of urban infrastructure and low-cost media technology (or between nurture/welfare/development and leisure/consumption) are now increasingly blurred (Graham & Marvin 2002, McCullough 2006) calling into question the older urban 'social' and its forms of management. The 'ecology' proposed by the massive Aadhaar biometric ID is fairly straightforward about this shift as part of its rollout mandate, as it proposes to connect identification, targeted welfare, financial inclusion, and formal bank accounts with the infrastructures accessible to the massive mobile phone population (UIDAI 2010, Nilekani 2011).

6 These developments in India tie in with the international expansions of information technologies and the new rhetoric of change associated with it. The historian of science Paul Edwards has pointed to the power of "rupture talk" attached to technology as the most familiar trope of modernization after World War 2, where elites and technocrats held out the possibility of rapid changes based on new technologies, a phenomenon that has rapidly increased with digital media (2011). The scale of this claim making is significant. As a recent collection points out, we are now presented the argument that all 'data' exists as an irreducible unit, 'before' the fact and where all phenomena can be reduced.

> "This shared sense of starting with data often leads to an unnoticed assumption that data are transparent, that information is self-evident, the fundamental stuff of truth itself" (Gitelman 2013).

7 This transaction between transparency and information plays out in this essay as modernizing elites and middle class groups came together to shift political categories of urban populations to 'apolitical' data sets made possible by new enumeration technologies. However, as the information historian Geoffrey Bowker points out, " 'raw data' is both an oxymoron and a bad idea" (cited in *ibid* : 1) 'Data' is generated through media technologies of writing, storage, and circulation, which have to engage with neighborhood networks, bureaucratic practices, activist mobilization, court cases and expanding media coverage. In this essay I am particularly interested in the materialization of new technologies in Indian cities, and their link to an expanding media culture. In recent years there is a new conversation across the disciplines on information culture (Edwards *et al*. 2011), infrastructures (Larkin 2013), and the 'augmented realities' of urban life, where socio-technical networks and digital interfaces increasingly constitute everyday life (Graham *et al.* 2013). This connection of infrastructure, information and augmented reality of urban life is a running theme in this paper albeit through an instable postcolonial lens.

8 In line with this approach, I begin with a discussion of paper-based ontologies that have dominated urban information infrastructures in the colonial and postcolonial period, and their relationship to practices of visibility and circulation. In the following second section, I look at the connections between urban displacement of the urban poor, information archaeologies, and the implications of middle class discourses in Indian cities that have made transparency a key vector in public discourse, including judicial pronouncements. In the next part of this essay I discuss in detail the relationship between information, technologies of transparency and urban infrastructure. Here I look the links between global transparency discourses, neoliberal ideologies and technologies of visibility and enumeration, affecting both land and population. In the Indian case these discourses have been incorporated by local middle class groups and regime modernizers, a process that assembles technologies of visibility, welfare, enumeration and national security fears. The enumeration of land and populations in digital databases is discussed in this section, including the design of the expanding Aadhaar biometric ID scheme. Finally, I examine the aporias of the informational turn, and the stakes for Indian and postcolonial urbanism.

Paper ontologies of urban governance

From the days of the British East India Company in the 17th century, colonial power in south Asia was based on the multiplication of writing genres as means of authentication. Constant authentication and verification through elaborate official procedure materialized colonial writing practices (Ogborn 2007). As Hull (2012) demonstrates, anxieties about non-correspondence between words and things pervaded colonial and postcolonial bureaucracies, leading to a multiplication of authentication systems of stamps, counter-signature, and paper genres. Documents systems sought to collectivize bureaucratic power and render it distinct from the public, but equally this power could be diluted by constant circulation of files and over writing by multiple officials (Hull 2012, Gupta 2012). Colonial power was based on a extensive deployment of these paper based information systems for routine policing as well as managing migrants, epidemics, and cross border movements. By the 1930s this had expanded to welfare and ration cards targeted at urban population groups. This system was particularly widespread in the war economy of the 1940s. After independence, the postcolonial regime drew significantly from this system, though aligning it to republican democratic politics. In postcolonial modes of urban governance, paper based databases (electoral rolls, ration cards, land lists) produced by state functionaries intersected with political mobilizations at local and city levels. As typical postcolonial technologies of visibility, paper based information systems played a dual role, they allowed the regime to manage urban residents through systems of exclusion and inclusion, while for political groups entry into the database constituted an important vector of everyday life (Singha 2000, Sriraman 2013). Such political strategies could range from strategic entry into some databases (electoral rolls, ration cards) with fuzzy, land ownership patterns and paralegal access to informal systems of electricity and water. In this constellation, an entry into one information system could co-exist with tactical invisibility in another. Small traders, residents of squatter settlements, migrants, moved in this shifting information ecology. As we shall see later, it was this porosity that became perceived as a crippling problem for India's globalization, underwriting the move to digital enumeration identification technologies. Yet, once technologies moved from classical enumeration to new technologies, control systems faced great strain, confusion and even fracture. The very technologies that were held out as intimating the future model of transparent urban governance have often rebounded, implicating both urban power and populations.

9 Partha Chatterjee (2004) argues that in contrast to liberal citizenship, political democracy was based on a conceptual division between citizens and populations, where the latter were empirical categories of people who received administered welfare policies, and subject to governmental technologies. The resulting formation, 'political society' was implicated in a series of complex social arrangements and political mobilizations, similar to the ones in Delhi's working class settlements. In parallel, Solomon Benjamin's work (2005) on post-1977 East Delhi shows how an informal 'neighbourhood as slum', used local political networks, mobilized cash-based real estate finance and sourced official electricity and water infrastructures by bribing lower officials. In differing ways both Chatterjee and Benjamin address the urban boom from the late 1977 period, where 'informality' mixed with local political mobilization slowly transformed the urban debates. During the 1980s in Delhi and other Indian cities weaker municipal regimes and political fractures allowed for new urban migrant networks and the steady expansions of

informal settlements. By the mid 1990s a different mood was perceptible. One of the main factors that politically weakened informal settlements was the rise of a middle class urban discourse in Indian cities from the late 1990s (Ghertner 2008).

10 These middle class activists initiated a series of campaigns that sought to transform urban discourse after the economic reforms in the 1990s. The groups included select resident welfare associations, neo-liberal activists, ecological groups, transparency campaigners (Baviskar 2002, Mehra 2011). The court became a crucial battleground for this new 'civic urbanism' (Sundaram 2009). Periodic media events around urban crisis centered around court cases on environment, traffic and industry. Middle class activists hammered away with an active media presence and aggressive court petitions (Sundaram 2009, Bhuvania 2014). Helped by a sympathetic judiciary and media, civic urbanism mobilized the molecular event into a larger urban spectacle, dramatizing and unveiling a partially visible informal city. The 24-hour single-issue television loop now familiar to Indian TV viewers emerged in this period, with experts, and the scrolling feed of text headlines below the main screen.

Information, Transparency, Urban Infrastructure

Transparency has become one of the main slogans of urban and national politics for the Indian middle class, culminating in the anti-corruption campaigns in 2011-12 (Jenkins, 2014).

11 Transparency had its first origins in French Enlightenment ideas on vision, light and optics. Light, it was believed, had the great power to penetrate dark spaces. The power of transparency lay, as Michel Foucault pointed out in his *Eye of Power* (1980) in the ability to see, without being seen. The new strategies of illumination were political technologies of visibility: statistics, hygiene, criminology, and the human sciences. In the first half of the 20th century, transparency was submerged into the mainstream wisdom of the social sciences, rather than the older 19th century optico-political register. By the post World War 2 period transparency arguments had dissolved into the larger body of modernization theory and development in the Third World.

12 Transparency's great revival was in the 1990s, in a decade of neoliberal ideologies and financial speculation. This was the discovery of new sources of opacity, along with legal rationalism. The new concern to make the invisible visible, moved into a diverse set of interventions: Hernando de Soto (2001) argued for formal property rights to mobilize what he called the dead (informal) capital of the South, corporate reform called for new 'transparent' models of financial disclosure, NGO activists called for legally visible and enumerated rights for migrants, microfinance, and new forms of documentation (Huchzermeyer 2009). A vast army of consultants and new forms of expertise emerged devoted to extract some form of visibility that could be measured for efficiency. This began an era of periodic institutional audits, review reports, and new standards set by consultants, ushering in what the anthropologist Marilyn Stathern (2000) calls the 'tyranny of transparency," the suppression of experimental and long term possibilities, in order to denote quantifiable standards.

13 Urban transparency campaigns became prominent in India after 2000. In Bangalore the NGO Janaagraha began a highly publicized effort to streamline the urban municipality (Ghosh 2005); at a larger, state wide level, operation Bhoomi was launched in Karnataka

to digitize land records (Benjamin & Bhuvaneswari 2001). Today NGOs work with local government to help with data collection for biometric surveys for slumdwellers in Mumbai, and Delhi. GIS projects have now spread to many Indian cities and towns. By 2005 two developments took place that placed transparency at the heart of public culture. In that year, a landmark Right to Information Law was passed by Parliament, following activist pressure for many years [3]. The act mandated a 'time-bound' response to requests for government information, usually 30 days, beyond which responsible officials would face salary cuts. Though the original act had caveats on national security, an activist Central Information Commission has expanded the scope of Right to Information (RTI) requests; the entire governmental system has been deluged with RTI requests on every walk of life. Not a day passes without corruption cases and scams unearthed due to RTI requests [4]. While not all RTI requests were about corruption, they helped place transparency at the heart of public discourse, helping a liberal agenda around information culture and the modernization of urban governance. Secrecy was seen as antiquated and undemocratic, and complicit with state corruption.

14 All this came in the in the background of expanding social welfare schemes from 2005, these included the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGA or simply NREGA), that guaranteed a minimum of 100 days employment to the rural poor in most districts across the country. NREGA was widely seen as a factor in the return to power of the Congress regime (Jeelani 2010, Kumbar 2009). With the return of the Congress party coalition to power NREGA was planned to include urban areas, along with existing social programs like the National Literacy Mission, and the Rural Health Mission. In this environment, informationalization and IT enabled information infrastructures were seen as important tools for stabilizing welfare delivery.

15 Biometric identification gained visibility after the events of September 11, and Indian technology companies actively pushed them to government bureaucrats and security agencies. By 2006 biometric identification technologies became popular in welfare schemes in Hyderabad, Pune and then Delhi. An ambitious identification drive among Delhi's urban poor named "Mission Convergence" launched in 2008 seeks to document uncounted urban populations, and overcome traditional networks of welfare disbursal. In its deployment of new information technologies, along with 'targeted' welfare delivery, Mission Convergence reflected many features of the new urban turn [5].

16 The attack by suspected Laskar-e Taiba militants on Mumbai in 2008 accelerated the setting up of new information infrastructures in India's cities. Without the monitoring of phone and satellite networks, the conversations between the attackers and the Pakistan-based handlers would have never been available to Indian police [6]. After the Mumbai attacks projects to bring both urban space as well as undocumented populations into the domain of the visible took on urgency for the regime in Delhi.

17 Michel Foucault spoke of the great "discovery of population in the 18th century;" technologies of enumeration allowed the shift of focus from sovereignty to governmentalization (2009). The new apparatus of security deploy political economy to generalize well being in the population and self-governance and surveillance in the context of a shrinking (neo-liberal) state. Biopolitics takes as its object living populations, generalizing technologies of self-management for life itself. In a postcolonial context of India, the shift to information infrastructures can be said to represent a "re-discovery" of the population for the regime. Existing technologies of urban enumeration like ration and electoral lists were seen as complicit with the corrupt legacy of politics, planning had

retreated as effective mode of revealing the city for urban power. Fragmentation of urban authority and inter-departmental conflicts raised serious concerns about managing the city. For the technocrats who were regime managers In India after the 1990s, information infrastructures offered an attractive alternative for re-assembling the social, and setting in motion new grids of management not compromised by the corporeal turns of everyday politics [7]. This was a model of modernization of the urban regime, which would also address the incessant call for 'transparency' coming from courts and middle class movements. The wager on informationalization involved a delicate balance between regime modernization, transparency, and secrecy – this has not been easy.

18 A significant initiative in Delhi has been the development of a massive GIS-based mapping exercise by the Survey of India, and the attempt to link welfare delivery to identification schemes using biometric technologies. In this section of the paper I examine these initiatives, drawing from current research.

The Map that sees

The direct takeover of Delhi by the British after the suppression of the uprising of 1857 initiated a series of exercises by the colonial power to represent the subjected city in terms familiar to the colonial rulers. European style cadastral maps now replaced the non-perspective Moghul map. Colonial infrastructure maps showing the water and sewage networks emerged by the early 20th century. By 1912, along with Edward Lutyens and George Baker's ambitious plan for the new capital, a significant survey of the city had been carried out by W.A.J Wilson, who was commissioned by the Government to prepare a series of maps that would document tenure, ownership and existing infrastructures. All structures, formal and informal were surveyed, along with courtyards, drains, balconies, stairways, waterways, rail and road networks, and land patterns. Religious and state buildings and their locations were duly noted, as well as ownership and tenancy details. Every enumerated dwelling was given a unique tax number as well as the name and occupation of the owner, father's name and tenancy details if applicable (Hosagrahar 2005). The survey was motivated by not just the colonial project of effectively policing the city, but also producing a clear transition to a property market that could be represented in terms of formal European theories of exchange and rational models of enumeration.

19 As an exercise, the Wilson survey amplified the rise of colonial technological power over precolonial ideas of land tenure and occupation that were divorced from capitalist exchange; it also fed into colonial information regimes like the census, health, and the police. For many years the Wilson survey maps helped not only in the design of the colonial capital, but was also used by the Fire Department, and electricity and transport companies.

20 By contrast, the surveys of the city initiated by the US experts involved in the making of the Delhi Masterplan of 1962 were significantly more modest, seeking to order the city as a rational machine, mapped on to forms of life that were considered sufficiently urban [8]. This involved a careful land use plan based on post war regionalist planning models. US sociological models of urban community that wanted to transcend caste and create an 'urban citizen,' were undertaken to intimate a transition to a postcolonial order (Hull 2011, Sharan 2006, Sundaram 2009).

21 By the 1990s the planning regime was in disarray, the control model long bypassed by the massive expansion of informal and nonlegal settlements. Complex urban morphologies

bore little resemblance to the Plan's 1950s mapping exercises. With the rise of middle-class civic liberalism and court interventions the clamour for a new mapping exercise grew louder. Courts were also faced with a large body of cases involving jurisdictional disputes between infrastructure providers: electricity, water, and telecom. Departmental disputes within the city government (fire, police, sanitation) over jurisdiction and territory were widespread as technologies of mediation that were established by urban political elites in the 1960s were largely in disarray by the 1990s. By 2006 the Supreme Court had ordered widespread sealing of shops deemed illegal under the old Masterplan, and the city went through a series of general strikes and a one year parliament moratorium on court sealing (Mehra 2011).

22 Appropriately in 2007, a USAID sponsored report prepared by a team of US based urbanists and Delhi-based real estate lawyers argued for a new computerized land titling system that would rationalize Delhi's land registration and stimulate the property market. The report saw banks, real estate firms, property owners and even slum dwellers benefiting from titling, it recommended that a new cadastral survey by the Survey of India be undertaken [9].

23 The Science and Technology Ministry soon began financing an ambitious mapping exercise by the Survey of India to produce a new GIS-enabled map of Delhi that would not just enable clarity over ownership but also address concerns of departmental jurisdiction, and police surveillance [10]. The project sought to combine the land registration system as well as a comprehensive urban spatial system. Known as Delhi State Spatial Data Infrastructure (DSSDI), the project began as a pilot venture in the Old Moghul section of Delhi called Shahjehanabad and was later expanded to cover all areas of the capital. The Old city had long been seen not just as a site of urban decay and infrastructural chaos but also as a space for terror threats. The DSSDI pilot project to map Shajehanabad's infrastructure overlapped with police efforts to place a CCTV system in place in the area. Police cameras and DSSDI's 60 cameras typically shared information, though their efficacy to monitor either terror threats or illegal construction is debatable.

24 The mapping exercise was administered by the Survey of India and contracted to Navayuga Spatial Technologies, a large infrastructure company in India [11]. The project's scale is unparalleled in the history of urban information systems in India. During visits to the media lab of the project in during the survey period of 2009-10, I saw rows of data-entry operators in a vast room. They were working on GIS software program modules, incorporating data sets from departments and infrastructure providers, cadastral information by researchers, and field surveys that draw infrastructure maps using GPR instrumentation. Formally, the project is aimed at establishing standards for urban information systems, rationalizing property titles, and providing real time video feed from cameras stationed around the city [12].

25 The project has data sets from 30 government departments (fire, labour, water, electricity, police, welfare, land registration etc.) that it seeks to rationalize and incorporate into a larger GIS mapping exercise. It uses the old aerial photographic surveys of Delhi by the India air force as a base, on which it overlays with GPR data collected with instrumentation [13]. Hundreds of field researchers collected property records through visits to all homes and urban villages in Delhi. Other field researchers photograph the façade of buildings in all main streets of the city, as well as historical sites. All residents are asked if they can prove their title to the dwelling. The urban population is divided into 'residents' and owners – the latter are those who can prove

title documents. In Delhi's so called urban villages researchers ask local village headmen or Patwari's about ownership details and also scan old Massavi records in Persian script.

26 Though the Survey of India presents the survey as a purely technical exercise not concerned with political issues. The DSSDI has been constantly getting requests by various city departments to clarify jurisdiction and territory issues through the mapping project. Matching all these demands has so far eluded the map project. In a city where the bulk of the urban population has mixed forms of non legal tenure raises a challenge for any model of technological transparency. An algorithm that assembles data sets in a GIS map like the one proposed for Delhi is a multiplicity, a human/technical ensemble; it has to address the social and political questions of the city that it sought to clarify [14].

The Aadhaar Biomentric Design and the New Urban turn

Among the early supporters of civic transparency initiatives in the 1990s was the entrepreneur Nandan Nilekani, one of the founders of the Bangalore-based software giant Infosys. An alumnus of Bombay's Indian Institute of Technology, Nilekani became one of India's most successful IT industrialists when he set up Infosys with his colleague MR Narayanamurthy. Infosys rode the IT boom of the 1990s by establishing supply networks with US companies and continuing to expand after 2001. From 2003 Nilekani positioned himself in the centre of India's intellectual discourse on transparency and economic transformation. In 2008, Nilekani published *Imagining India : the Idea of a Renewed Nation*. The book opened to ecstatic reviews in the Indian and international press; Widely researched by a large team that worked for him, *Imagining India* argued for Nilekani's typical mix of civic liberal ideas, where individual freedom in markets free of interference would prosper with social infrastructure built by the state. Citizenship in the new order was to be based on a transparency regime that guaranteed rights through unhindered access to universal identification. India's government departments are isolated technologically, argued Nilekani, choked with paperwork, and lack a common technological grid. Service delivery is crippled and inefficiency abounds (350: 2009).

27 An ID system concluded Nilekani, would have "revolutionary" implications for India.

> "No one else can claim a benefit that is rightfully yours, and no one else can deny their economic status" (Ibid: 354).

28 In the link of individual freedom and rational information systems and service delivery to the poor *Imagining India* articulated an emerging elite consensus on developing new techniques of government in the years after 2005 This consensus saw the argument for the old 'social' based on political incorporation into welfare increasingly difficult to sustain following the neo-liberal era. The focus on the formal economy after the reforms of the 1990s, magnified the space of the 'informal' as a 'not yet' – a space where techniques of escape by errant populations were seen not just as sources of waste but also potential criminality and terrorism. Nilekani's 'countability' along with new forms of visibility through digital surfaces, has now come to occupy prime place in the new discourses on modernization in contemporary India.

29 In June 2009, the Indian Prime Minister invited Nandan Nilekani to join the newly created Unique Identification Authority of India as a head with a cabinet rank. The Authority would set about creating a common Unique Identifying Number (UID) for all residents.

Though a national project, the UID has great relevance for urban infrastructure as most identification projects compare themselves to the UID in cities.

30 The UID initiative came in the background of existing historical practices of identification in 20th century India. The colonial regime had set up an information infrastructure for food rationing in the late 1930s, which made complex classifications based on the war economy and the need to manage food shortages in India. (Sriraman, 2013) Ration cards were introduced to different categories of the urban population, including able workers, government servants, and food distribution managed through authorized shops.

31 In the 1950s the Planning Commission under Dr P.C Mahalonobis, standardized data collection and sampling, and introduced computers for data processing [15]. The colonial ration card was streamlined to remove multiple categories, and a family-unit based system covering select urban populations was initiated. It was in late 1993 that a massive ID project was launched by the Election commission, using electoral rolls and video cameras for still photography of the entire voting population. Though the Election ID project had mixed results, it has emerged as a recognizable identity document in airports and courts of law as proof of identity. With the reforms of 1992 and the subsequent expansion of the formal financial economy, the Income Tax department came out with PAN (permanent account number) for all taxpayers.

32 The establishment of the UID aims to build on and standardize all the existing information data bases in the country. The UID number will only provide identity not rights or citizenship, a clear departure from Nilekani's model in his book. The UIDAI's mandate will be limited to the issuance of unique identification numbers linked to a person's demographic and biometric information. Further, the UID would work with registrars – local and other governmental institutions to enroll residents into its database with proper verification of their demographic and biometric information. These now include banks, and multiple private agencies, who are the main drivers of the project [16]. The UID, now called Aadhaar, is the largest postcolonial identification initiative after the coming of new media- both in terms of scale and the massive numbers of people covered. The main promoters of the project have been the security establishment, and commercial entities like banks who hope to benefit from its model of 'financial inclusion'. Financial inclusion pushes all those who have Aadhaar towards formal bank accounts, nudging the urban poor away from the cash economy [17]. This has also been a privatized model of identification. The main work in the UID is done by private companies who are paid for each person identified, the idea is that the population 'volunteers' for identification, rather than receive visits from state functionaries.

33 Aadhaar has two components that directly impact urban life, along with the rest of India. The dynamic authentication model, where the number verifies identity for both state and private services, is premised on multiplication, and an expansion of the market for financial and other products. Digital verification assumes that traditional intermediaries of the existing information economy (politicians, local officials) will be bypassed in place of a permanent visible bond of the population with governmental power. Second, the assumption is as welfare payments are routed directly to beneficiaries' formal bank accounts in a 'targeted' approach, the infusion of cash into the urban poor will expand the range of financial services and private players available, and weed out the corrupt (Chaganti 2013 : 26-43). This model of private information harvesting has pushed Aadhaar into conflict with other state bodies like the National Population Register that gather

information based on the Citizenship Act, as well as social activists who have questioned the mandatory link to welfare disbursals (Bhatti *et al.* 2012, Rajadhyaksha 2013).

34 The Aadhaar design at its most utopian is expresses what Mazzarella (2006) calls the "dream of immediation", where urban populations are positioned in a clean, direct relationship to a transparent state, uncluttered by corrupt local intermediaries and the venalities of traditional politics. This is also a media and technologically-inflected design, the UID's authentication number attaches itself to all emerging social programmes in the city: health insurance, direct cash transfers, fuel subsidies, and bank accounts. Aadhaar has been aggressively promoted by the Modi regime, making the project a consensus model of the Indian elite [18].

Conclusion: the aporias of the informational turn

At a more ambitious level, the informational turn sought to update and modernize the old relationship between urban populations, land and social power. Biometric Identification was held out as the main filter to enter urban citizenship, rearranging the older model of the population mediated by city politics and local networks. GIS mapping seeks to open up large tracts of urban land, including the informal zones to property titling, private infrastructure and surveillance, all of which are massive shifts from the planning designs of the 1960s. As technological infrastructures managed by private companies and state technocrats play an increasing role, traditional political mobilization in the city faces a great challenge. Older urban politics had produced itself as a sole gateway to paper information regimes in the city (ration cards, land mutation, election IDs); today this arrangement faces a significant challenge.

35 What of transparency? In recent debates transparency and the secrecy of the political state were set up as polar, quantifiable opposites, where an increase in one would lead to the decrease in another (Birchall 2011). Thus the NGO Janaagraha campaigned for transparency in the Bangalore Municipality for better efficiency and less corruption, Delhi's crusading courts called for transparent technologies in multiple judgments. Transparency campaigns have convulsed all in the world today from corporate reformers, to anti-corruption urban activists in India. Opacity in urban life has been a productive site for subaltern populations- witness the great growth of postcolonial cities in the 'informal' boom of the 1970s. Opacity has always functioned as a productive limit to the transparent rationalism of the masterplan, it was under the shadow of this secret that the urban poor were able to expand their spaces in the city in the last three decades. Here lies the key question for the postcolonial city after information. Will the older slogans of the 'right to the city' need to be reframed in light of media-enabled population in the postcolonial world? Low cost networks like mobile phones increasingly entangle urban populations in new infrastructures of visibility and consumption, while simultaneously enabling new local city politics, and new popular mobilizations [19]. Will urban populations develop new techniques of escape/reattachment with informational networks? These are the questions for emerging postcolonial cities in the next decades.

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NOTES

1. Comparable ventures include information networks in the city-state of Singapore, and South Africa's long experience of biometric identification.

2. Globalization can be read back to the early days of the capitalist world economy in the sixteenth century. In this essay I use the term as a conceptual shorthand to address a time-space constellation inaugurated by the economic reforms of the 1990s in India. Here globalization includes a number of things: neoliberal reforms, information as a value of governance, public-private partnerships as a model for building infrastructure. Globalization also functions as a cultural code to mobilize sentiment for endless economic reform and market liberalization.

3. For a copy of the Act see http://righttoinformation.gov.in/ Accessed May 1, 2010

4. RTI requests articulate a range of impulses, ordinary desires for justice, anti corruption campaigners and transparency activists, and rivalry in the state bureaucracy and corporate classes.

5. See http://www.missionconvergence.org/ An official report stated that a "strong ICT backbone for the program was required, to check leakages, and to increase the efficiency, transparency, and accountability of service delivery." See http://www.missionconvergence.org/A%20status%20report.pdf , Accessed, July 2013.

6. See the extracts from the dossier given by India to Pakistan after the Mumbai attacks. http://www.hindu.com/nic/dossier.htm Accessed, July 1, 2013.

7. Neoliberal demands for visible, enumerated land titles to stimulate urban growth also found a receptive ear among regime managers.

8. See Delhi Development Authority (DDA), 1962. *Masterplan for Delhi*, Work Studies Vols 1, and 2, Delhi

9. "A New Land Title Registration System for Delhi: Recommendations" Report prepared for the U. S. Agency for International Development / India April 2007 http://pdf.usaid.gov/pdf_docs/PNADN713.pdf Hernando De Soto also visited Delhi, where he was warmly welcomed by the Urban Development Ministry. http://pib.nic.in/newsite/erelease.aspx?relid=76473 Accessed January 2010.

10. This is what the official press release stressed: "Development of a 3D-GIS database for NCT of Delhi will be carried out by Survey of India in respect of all lands and buildings and all under ground utilities within the NCTD. The project will facilitate detection of illegal constructions by the government of Delhi and enable monitoring of any changes being made in respect of land and building in GNCTD on real time basis." http://dst.gov.in/whats_new/press-release07/dssdi-launched.htm

11. See http://www.navayugaspatial.com

12. This section draws from 10 interviews and field notes at the Survey of India and Navayuga offices and work-sites, 2009-2010.

13. This was the mapping of underground and over-ground utilities such as cables, pipes etc. with their accurate location, depth and size on 1:2000 scale using a mechanized Terravision instrument.

14. The database has been ratified by a new law in the state assembly and made 'mandatory' for government departments. See "Mandatory use of geo-spatial data for Delhi govt depts.". *The Economic Times*. Available at: http://articles.economictimes.indiatimes.com/2012-04-08/news/31308458_1_geo-spatial-data-data-infrastructure-infrastructure-projects [Accessed September 22, 2013]

15. The National Sample Survey was the main agency for data collection. The Indian Statistical Institute was largely shaped by the vision of P.C Mahalanobis and began using computers from the 1950s.

16. See http://uidai.gov.in/index.php/aadhaar-technology.html Accessed on December 2011

17. Aadhaar recipients are given free postal bank accounts, where payments are transferred for welfare schemes.

18. The Indian Supreme Court in an important verdict declared that Aadhaar would not be compulsory, but voluntary. However the court allowed the use of Aadhaar for social welfare programmes of the government. http://indianexpress.com/article/india/india-news-india/sc-allows-aadhaar-use-for-other-government-schemes-on-voluntary-basis/ Accessed 16 December 2015. In 2016 the government passed the Aadhaar (Targeted Delivery of Financial and Other Subsidies, Benefits and Services) Bill, make Aadhaar a condition of state benefits.
http://economictimes.indiatimes.com/articleshow/51248470.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst.

19. Examples include the Aam Aadmi Party in Delhi December 2013, which actively used low cost media and social networks. The AAP is a new party that emerged out of the anti corruption movements of 2011.

INDEX

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